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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,092	04/08/2004	Francisco Juarez	NOVE100041000	8981
22891	7590	11/16/2007		
LAW OFFICE OF DELIO & PETERSON, LLC. 121 WHITNEY AVENUE 3RD FLOOR NEW HAVEN, CT 06510			EXAMINER MILLER, MICHAEL G	
			ART UNIT	PAPER NUMBER
			1792	
			MAIL DATE	DELIVERY MODE
			11/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/821,092

Applicant(s)

JUAREZ ET AL.

Examiner

Michael G. Miller M6M

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 20-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Examiner notes the amendments filed on 27 August 2007 and confirms that they do not introduce new matter into the application.

Response to Arguments

2. Applicant's arguments filed 27 August 2007 with respect to claims 1-10 have been considered and are persuasive in view of the claim amendments. The rejections of Claims 1-10 have been withdrawn.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-10 are rejected under 35 U.S.C. 102(e) as being anticipated by
Kalynushkin et al (PGPub 2003/0185977, hereinafter '977)

5. With regard to Claim 1, '977 teaches a method of depositing material on a substrate comprising:

- a. Providing a reactor with a reaction chamber having a first volume (Figure 1, Item 120);
- b. Introducing a first precursor into the reaction chamber at the first chamber volume (PG0054, where the chamber volume is minimized before the introduction of vapor from the evaporation device (Item 17, Figure 1));
- c. Contacting a surface of a substrate in the reaction chamber with the first precursor at the first chamber volume to react with and deposit a first layer on the substrate (PG0054; referring to the condensation of vapor on the surface of the substrate); and
- d. Enlarging the reaction chamber to a second, larger volume (PG0054) and removing undeposited first precursor and any excess reaction product to end reaction of the first precursor with the substrate (PG0068, discussing a vacuum valve to evacuate the chamber).

6. Claim 2 adds a repetition of the steps of Claim 1 using a second precursor. The concept of multilayer depositions is discussed in PG0086.

7. Claim 3 details removing the reaction byproducts from the chamber with a gas stream. PG0067 teaches an inlet for an inert gas stream which will inherently halt the reaction by diffusing the reactive gas in the chamber and carrying it to the vacuum outlet.

8. Claim 4 details removing the reaction byproducts from the chamber with a vacuum stream. This is taught in PG0068.
9. Claim 5 defines the geometry of the reaction chamber as having a pedestal (the lid of the chamber in Figure 1) to secure the substrate during deposition. This pedestal is movable between a first and second position (Item 12 and its support are attached to Item 15, Figure 1, a structure that allows the top portion to lower and raise; PG0068 discusses the expansion and contraction of the chamber). The chamber has a first chamber section above the pedestal (the curved portion of the lid above the substrate support) which is the first chamber volume. The chamber has a second chamber section in the extended position. As the top portion of the chamber rises, a cylindrical section is added to the bottom of the chamber volume with a height equal to the displacement. These first and second chamber sections, which are only present together when the pedestal is in its second position, define the second chamber volume.
10. Claims 6-7: The second volume is below (i.e., on at least one side of) the pedestal (Figure 1).
11. Claim 8 is a combination of the subject matter of Claims 1 and 2; said combination is taught in PG0068.
12. Claim 9 is coextensive in scope with Claim 5 and is rejected by the same argument.
13. Claim 10 is coextensive in scope with Claims 6 and 7 and is rejected by the same argument.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

16. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

17. Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over '977 in view of Vukelic (U.S. Patent 5,268,034, hereinafter '034).

18. Claims 20-22 call for the inclusion of a perforated plate above the pedestal in the reaction chamber through which the precursor passes. This is not taught in '977.

19. '034 teaches a fluid distribution head in which a fluid, defined as inclusive of vapors enters through one channel and exits through a perforated plate to help evenly disperse the vapor (Column 4 Lines 1-34).

20. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have combined the method of '977 with the device of '034, since '977 wants to deposit a compound on a surface and '034 teaches a device which allows deposition of a compound on a surface and advantageously disperses the fluid flow.

Conclusion

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Application/Control Number:
10/821,092
Art Unit: 1792

Page 7

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael G. Miller whose telephone number is (571) 270-1861. The examiner can normally be reached on M-F 7-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on (571) 272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MGM M6M


MICHAEL CLEVELAND
SUPERVISORY PATENT EXAMINER